

Appl. No.: 10/618,499
Amdt. dated Sept. 30, 2004
Reply to Office Action of June 30, 2003

II. Remarks In Response to the Office Action

A. General Remarks

Claims 1-32 were pending in the application prior to this reply. Claims 33-44 have been added. Therefore, claims 1-44 are pending in the application.

For the convenience of the Examiner, Applicant has reprinted portions of the Office Action mailed 6/30/04 in 10-point type, bolded and italicized. Applicant's statements or arguments immediately follow each section.

B. Claim Objections

1. Claims 1-14 are objected to because of the following informalities: claim 1, line 1, it is preferred to insert -- prepared-- between "low-gloss surface" and "by". Appropriate correction is required.

Claim 1 has been amended to address the Examiner's objection by inserting "prepared" between "low-gloss surface" and "by". Applicant has also replaced "An" with "A" in claim 1. Both of these amendments are merely cosmetic. Applicant respectfully requests withdraw of the objections and the allowance of claims 1-14.

C. Claim Rejections - 35 USC § 102

3. Claims 1-5, 15-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Diehr et al. (US Pat. 3,870,665). Diehr teaches a building article, such as a sheet, comprising a lignocellulosic material, such as fiberboard, impregnated with isocyanate and a catalyst (see col. 1, ln. 6-10; col. 2, ln. 3-9). The isocyanate is diphenylmethane diisocyanate (methylene diphenyl diisocyanate) (see Example 1). Since Diehr teaches the use of a catalyst as a release agent, the lignocellulosic material does not adhere to the metal part of the press. Hence, the lignocellulosic material is substantially non-conductive.

1. Claims 1-5 Are Not Anticipated by Diehr

Applicant respectfully traverses the Examiner's conclusion that Diehr (US 3,870,665) anticipates claims 1-5 in so far as Diehr does not teach or suggest all the limitations in claim 1 nor does Diehr imply the structure of the process steps of claim 1.

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Claim 1 requires:

1. A building article having a smooth, low-gloss surface prepared by:
 - (1) impregnating a lignocellulosic material with an isocyanate resin material;
 - (2) removing excess isocyanate resin from the impregnated lignocellulosic material by impinging air at a high flow rate upon the impregnated lignocellulosic material;
 - (3) polymerizing the resin by applying water to the impregnated lignocellulosic material, the water being at a temperature sufficient for polymerization; and
 - (4) removing the water from the polymerized resin-impregnated lignocellulosic material.

To anticipate claim 1, Diehr must disclose all of the limitations of claim 1. Furthermore, when considering a product-by-process claim, the "structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product." MPEP 2113 citing *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979). Applicant contends that Diehr does disclose all of the limitations of claim 1 and, further, does not imply distinctive structural characteristics imparted by the process steps of claim 1.

Diehr discloses a compression molded material prepared by "a process for molding a lignocellulose material such as wood chips, shavings or the like with an organic polyisocyanate binder in a mold coated with a release agent which contains a catalyst for the polymerization of -NCO groups to form isocyanurate rings" Diehr at col. 2, ll. 5-9. In Diehr, the polyisocyanate is used as a binder with the lignocellulose material to form a resultant material in a conventional gluing apparatus, and a catalyst is used so that the resultant material detaches itself from a press used to compression mold the resultant material. See e.g., Diehr's Example 1 at col. 5, ll. 30-45. At most, Diehr discloses that after mixing the polyisocyanate as a binder for the lignocellulose material in a gluing apparatus, applying catalyst, and compression molding, a fiberboard "which is smooth on both sides and can be spontaneously detached from steel sheets is obtained." Diehr at (Example 8) col. 7, ll. 7-9.

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In contrast, claim 1 requires "a smooth, low-gloss surface" and requires that the lignocellulosic material be "impregnated" with isocyanate resin material. Diehr does not teach or suggest that the material in Diehr having polyisocyanate as a binder and compression molded has such a smooth, low-gloss surface, as required in claim 1. At most, Diehr discloses a lignocellulosic material having polyisocyanate as a binder ("glue") and having a smooth surface.

Furthermore, the process steps of claim 1 impart distinctive structural characteristics that are not implied by Diehr. Namely, claim 1 requires a building article having *a smooth, low-gloss surface* prepared by *impregnating* the lignocellulosic material with the isocyanate resin material. *Removing* excess resin from the *impregnated* material is achieved by *impinging* air at a high flow rate upon the impregnated lignocellulosic material. In addition, *polymerizing* the resin is achieved by applying water to the impregnated lignocellulosic material.

In *In re Garner*, terms such as "welded," "intermixed," "ground in place," "press fitted," and "etched" were held to be capable of construction as structural limitations in a product-by-process claim. See MPEP 2113. Therefore, the terms such as *a smooth, low-gloss surface*, *impregnating*, *impregnated*, *impinging*, *removing* excess resin, *polymerizing* the resin of claim 1 imply structural limitations of the building article of claim 1. Because Diehr does not imply such structural limitations, Diehr does not anticipate claim 1.

For at least these reasons, Applicant believes that claim 1 and claims 2-14 depending therefrom are in proper form for allowance and respectfully request that the Examiner indicate the allowance of these claims in the next paper from the Office.

2. Claims 15-23 Are Not Anticipated by Diehr

Applicant respectfully traverses the Examiner's conclusion that Diehr (US 3,870,665) anticipates the listed claims 15-23 in so far as Diehr does not teach or suggest all the limitations in claim 16.

Claim 16 has been rewritten in independent form and requires:

16. An article comprising a lignocellulosic substrate impregnated with a polyisocyanate material, wherein the impregnated lignocellulosic substrate comprises a smooth, low-gloss surface.

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To anticipate claim 16, Diehr must disclose all of the limitations of claim 16. Applicant contends that the Diehr does teach or suggest all of the limitations of claim 1.

As noted above, Diehr discloses a compression molded material prepared by "a process for molding a lignocellulose material such as wood chips, shavings or the like with an organic polyisocyanate binder in a mold coated with a release agent which contains a catalyst for the polymerization of -NCO groups to form isocyanurate rings" Diehr at col. 2, ll. 5-9. In Diehr, the polyisocyanate is used as a binder for the lignocellulose material to form a resultant material in a conventional gluing apparatus, and a catalyst is used so that the resultant material detaches itself from a press used to compression mold the material. *See e.g.*, Diehr's Example 1 at col. 5, ll. 30-45. At most, Diehr discloses that after mixing the polyisocyanate as a binder for the lignocellulose material in a gluing apparatus, applying catalyst, and compression molding, a fiberboard "which is smooth on both sides and can be spontaneously detached from steel sheets is obtained." Diehr at (Example 8) col. 7, ll. 7-9.

Lignocellulose material in Diehr has polyisocyanate applied to it as a binder in a conventional gluing apparatus. In contrast, claim 16 requires "a lignocellulosic *substrate impregnated* with a polyisocyanate material." Therefore, Diehr does not teach or suggest a lignocellulosic substrate impregnated with polyisocyanate material, as required in claim 16. Furthermore, claim 16 requires that "the impregnated lignocellulosic substrate comprises *a smooth, low-gloss surface*." Diehr does not teach or suggest that the material in Diehr having polyisocyanate as a binder and compression molded has such a smooth, low-gloss surface, as required in claim 16. At most, Diehr discloses a lignocellulosic material having polyisocyanate as a binder and having a smooth surface.

Because Diehr does not teach or suggest all of limitations required in claim 16, Diehr does not anticipate claim 16. For at least these reasons, Applicant believes that claim 16 and claims 15 and 17-44 depending therefrom are in proper form for allowance and respectfully request that the Examiner indicate the allowance of these claims in the next paper from the Office.

Claims 15, 17-23, and 29-32 have merely been amended to depend from claim 16. New claims 33-44 have been added to depend directly or indirectly from claim 16. New

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claims 33-44 are fully supported by the originally filed disclosure and do not add new matter.

New claims 33-44 are at least supported as follows:

Claim(s)	Support in Originally Filed Specification
33	Paragraph [0017] and Figure 1
34	Paragraph [0018] and Figure 1
35-36	Paragraphs [0005], [0033] through [0035]; [0045] through [0046]; Figure 1; and Table 5
37	Paragraph [0024] and Figure 1
38	Paragraph [0024], [0027] and Figure 1
39	Paragraph [0025] and Figure 1
40-41	Paragraph [0015]
42	Paragraph [0044] and Table 5
43	Paragraph [0044] and Table 5
44	Paragraph [0041] and Table 2

D. Claim Rejections - 35 USC § 103

5. Claims 6-13 and 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diehr as applied to claims 1 and 14 above. Diehr is as set forth in claims 1 and 14 above and incorporated herein. Diehr teaches the lignocellulosic material to be used in building purposes such as veneer, sheets, and the like (see col. 1, ln. 6-21). Hence, although the reference does not specifically teach the material to be used as construction components as recited in the instant claims, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that these structures would have been variations in the use of the lignocellulosic material.

Applicant respectfully traverses the Examiner's conclusion that Diehr renders the listed claims 6-13 and 24-33 obvious in so far as Diehr does not teach or suggest all the limitations in claims 1 and 16, from which claim 6-13 and 24-33 depend.

As noted above, Diehr does not teach or suggest all the limitations of claim 1. Namely, Diehr does not teach or suggest an article "having a smooth, low-gloss," as required by claim 1. Furthermore, Diehr does not teach or suggest distinctive structural characteristics imparted by the process steps of claim 1. As also noted above, Diehr does not teach or suggest all limitations of claim 16. Namely, Diehr does not teach or suggest "a lignocellulosic *substrate*

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impregnated with a polyisocyanate material" nor does Diehr teach or suggest that the impregnated lignocellulosic substrate "comprises *a smooth, low-gloss surface*," as required by claim 16.

Because Diehr does not teach or suggest all of the limitations of claims 1 and 16, Applicant believes that claims 6-13 and 24-33 are not rendered obvious over Diehr and respectfully requests that the Examiner indicate the allowance of these claims in the next paper from the Office.

E. Fees


This amendment adds 12 new dependent claims to the application. Accordingly, the undersigned representative authorizes the Commissioner to charge the fee of \$216.00 to Deposit Account No. 501922/124-0002US-D. The undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application. Should any fees be due for any reason, the undersigned representative authorizes the Commissioner to charge any additional fees that may be required, or credit any overpayment, to Deposit Account No. 501922/124-0002US-D.

To facilitate the resolution of any issues or questions presented by this paper, Applicant respectfully requests that the Examiner directly contact the undersigned representative by phone to further the discussion, reconsideration, and allowance of the claims.

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Respectfully submitted,

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